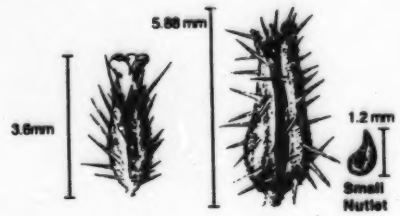
SASKATCHEWAN

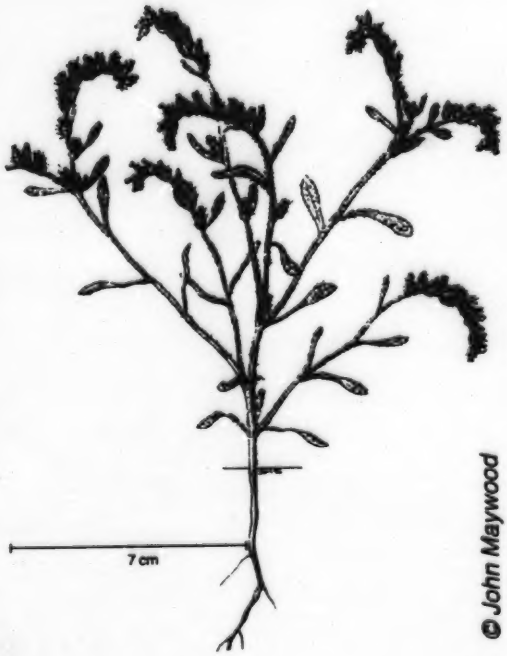
Tiny Cryptanthe

(Cryptantha minima)

Status: Endangered

Species at Risk





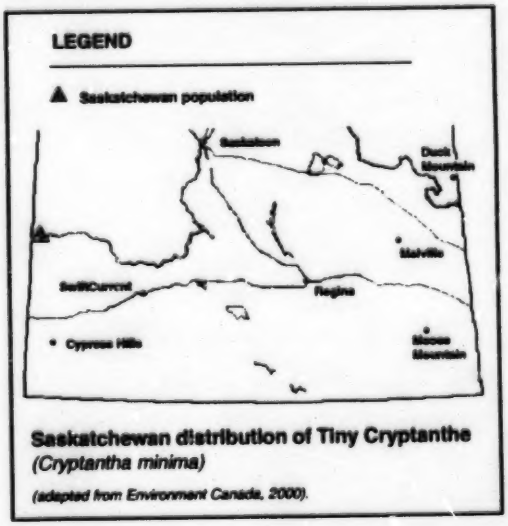
Description

Plant: Tiny Cryptanthe is an annual species belonging to the Borage family (Boraginaceae). It is also known as Little Cat's Eye. The stem of the plant branches near the base and can reach 20 centimetres in height. The leaves and stems are bristly-hairy, giving the plant a whitish appearance. The leaves are alternate, linear, with blunt tips and tapered bases, up to three centimetres long and 0.5 centimetres wide.

Flowers: Tiny Cryptanthe's white flowers are tube-like, with lobes at right angles at the top, and a yellow 'eye' in the centre. They measure up to three millimetres long and two millimetres across. The flowers can be present in the top two thirds of the plant. Each flower has a leaf-like bract below it on the stem. The bracts are smaller than the leaves on the stems, but may be longer than the sepals of the flowers beside them. The main veins on the sepals are whitish, thick and hard.

Fruits: Tiny Cryptanthe's fruits are four nutlets with roughened sides. They are of two sizes. Typically, one of the four nutlets is larger (1.6 to 2 millimetres long by 1.2 millimetres wide) than the other three (1.2 to 1.5 millimetres long by 0.7 to 0.9 millimetres wide).

Similar species: Fendler's Cryptanthe (*Cryptantha fendleri*) is a similar hairy annual of eroding sandy habitats. It generally has branches arising closer to the top of the central stem, rather than near the base. Tiny Cryptanthe has bracts beneath all of its flowers, but *Cryptantha fedleri* has bracts only under the lowest flowers. It is less densely hairy than Tiny Cryptanthe. The nutlets of Fendler's Cryptanthe are smooth sided. In the fall, *Cryptantha fendleri* dries up erect and stays white, while *Cryptantha minima* turns brown and falls apart.



Saskatchewan distribution of Tiny Cryptanthe *(Cryptantha minima)*

(adapted from Environment Canada, 2000).

For flower and seed details, see illustration on page 1

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Tiny Cryptanthe *(Cryptantha minima)*

Kelsey's Cat's-eye *(Cryptantha kelseyana)*

Fendler's Cryptanthe *(Cryptantha fendleri)*

Branching

- Branches from the base up

Branches higher

All 3 species have alternate leaves:

Leaves and stems densely hairy, whitish, bristly

Leaves and stems densely hairy

Leaves and stems less densely hairy

Inflorescence

All 3 species have an inflorescence that is coiled when in bud, and unfolds as the flowers open:

: side view

1 bract under each flower. Bracts longest under the bottom flowers

Top view:

1 bract each, below lowest flowers only

1 bract each, below lowest flowers only

Nutlets as they appear inside the bristly fruit

top view:

side view:

1.6-2 mm

1.2 mm

- All 4 with roughened sides
- 1 larger than the other 3
- The largest with numerous small bumps
- The 3 smallest with few large bumps

2-3 mm

1.2mm

- 1 larger than the other 3
- The largest is smooth
- the 3 small ones with roughened sides

1.5-2 mm

.7mm

- All 4 the same size
- All 4 with smooth sides

Fall Appearance

- Turns brown and falls apart

- turns brown and falls apart

- Dries up erect and stays white

Kelsey's Cat's-eye (*Cryptantha kelseyana*) is a species sometimes included with Fendler's Cryptanthe: it appears similar to Fendler's Cryptanthe in that it has bracts only beneath the lowest flowers. The nutlets are similar to those of Tiny Cryptanthe in that one is larger in size than the other three. Like *Cryptantha minima*, it turns brown and falls apart in the fall. Specimens collected in Saskatchewan and Alberta, identified as Kelsey's Cat's-eye, provide our only knowledge about its range in Canada.

Status

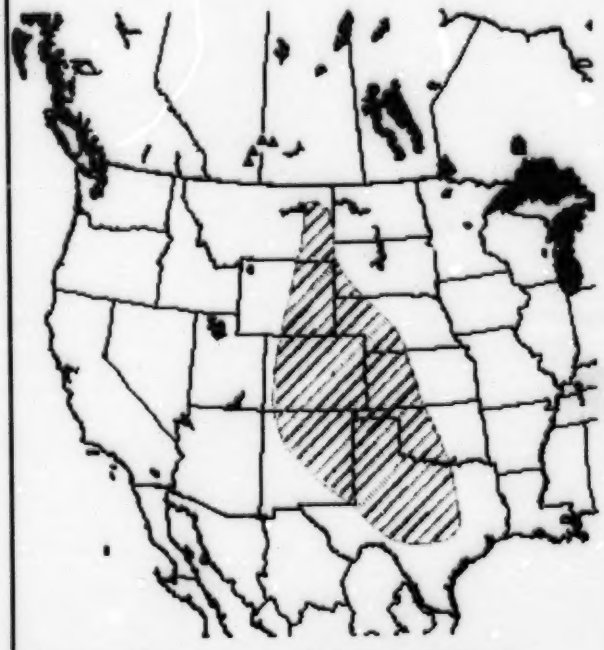
The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) listed Tiny Cryptanthe as endangered in 1998. Listed as an endangered species in Saskatchewan, in *The Wild Species at Risk Regulations*, Tiny Cryptanthe is protected on private, provincial and federal lands under part V of *The Wildlife Act*.

North American Distribution of the Tiny Cryptanthe
(*Cryptantha minima*)

LEGEND

▲ Canadian population (2000)

United States distribution (1997)



(adapted from Environment Canada, 2000, and Smith, 1997).

This plant is found only in North America. Tiny Cryptanthe has spotty distribution in the Great Plains and most populations consist of only a few plants.

In Canada, prior to 1996, the species was restricted to four sites along the South Saskatchewan River, from just north of Medicine Hat, Alberta, to just east of the Alberta/ Saskatchewan border. In Alberta, Tiny Cryptanthe was found at only one site near the town of Empress in 1996. It was not found in Saskatchewan in the 1996 survey, and the other historic site has not been recently checked. Today, the Canadian population is estimated at less than 100 plants, and is continuing to decline due to loss of habitat.

As of 1999, Tiny Cryptanthe was present in Montana, Wyoming, South Dakota, Nebraska, New Mexico, Colorado, Kansas, Texas, and Oklahoma, in the United States. The species is listed as rare to uncommon in Wyoming.

Habitat

Tiny Cryptanthe is found in the Mixed Grassland Ecoregion within Alberta and Saskatchewan. In Alberta, Tiny Cryptanthe is found with a variety of weedy species on eroding areas and slopes. The remaining Saskatchewan population is found on a dry, disturbed, sandy, south-facing slope in a more natural environment.

Life Cycle

Tiny Cryptanthe is an annual. It only reproduces sexually by seed. In the Great Plains, the species flowers in early summer (May to July). In Saskatchewan, it likely blooms between June and July. The seeds usually mature in July. The seeds are dispersed when plant parts break off and the stiff bristles of the fruit catch on clothes or animal fur. Research is necessary to gain more information on the life cycle of this plant.

Limiting Factors

Conversion of the Mixed Prairie Grassland Region into cultivated crops has destroyed habitat for Tiny Cryptanthe. More than two-thirds of the Mixed Prairie Grassland has been converted into agricultural land. Recently, one population at Westerham, Saskatchewan, was considered lost due to the land being converted into agricultural crops. It is possible that some plants remain on or near the former railway bed.

Development of dams and other water diversions may also have affected populations of Tiny Cryptanthe. The dams along the South Saskatchewan River caused considerable land to be flooded. Although no known populations were destroyed by flooding, it is possible that some populations were lost. Since the species is found only on sites along the South Saskatchewan River, further flooding could entirely wipe-out the species within Canada.

Recovery Actions

There is currently no recovery plan for Tiny Cryptanthe. The plant has been protected since 1999 on private, provincial and federal land in Saskatchewan under part V of *The Wildlife Act*. The recommended recovery actions for this plant are identifying the remaining habitat to be secured, and monitoring the population.

In many cases, the entire ecosystem is endangered and not just a specific endangered species. These ecosystems are fragile and must remain undisturbed. The continued survival of all endangered species relies on protecting the habitats of the species at risk as well as the species themselves.

Important: It is important to note that all endangered species, including plants, are protected in *The Wild Species at Risk Regulations* under part V of *The Wildlife Act*. Tiny Cryptanthe is protected on private, provincial and federal lands. It is unlawful to pick or collect endangered plants, or seeds of endangered plants, without a special permit.

If you observe Tiny Cryptanthe growing in the wild, please contact the Saskatchewan Conservation Data Center online at www.biodiversity.sk.ca

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Selected References

Please contact your local library or visit the Internet sites below for more information on Tiny Cryptanthe.

Environment Canada. 2000. All species at risk (Map). [Online]
When selecting the species, go under Cryptanthe Tiny
http://www.sis.ec.gc.ca/cgi-eas/endanew.exe
Last visited: March 15, 2001

Environment Canada. 2000. Tiny cryptanthe. [Online]
http://www.speciesatrisk.gc.ca/Species/English/SearchDetail.cfm?SpeciesID=553
Last visited : March 15, 2001

Kartesz, J.T. and C.A. Meacham. 1999. Synthesis of the North American Flora. Version 1.0. In CD format.
North Carolina Botanical Garden.

Smith, Bonnie. 1997. Status report on species at risk in Canada: Tiny Cryptanthe (*Cryptantha minima*).
The Committee on the Status of Endangered Wildlife in Canada. 18pp.

The Natural Heritage Network site will let you link to all the provinces and states.
http://www.heritage.tnc.org/
Last visited: March 15, 2001

July, 2001

Saskatchewan Environment and Resource Management

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LOTTERIES